IN THE SPECIFICATION:

Please replace the following paragraphs.

On page 1, in the paragraph beginning on line 11:

-- Conventionally, various gases are used in ~~a~~ semiconductor manufacturing processes depending on the particular process adopted. For example, perfluoro compound (PFC) gas which is a mixture containing fluorine compounds such as CF_4, NF_3, C_2F_6, C_3F_8, SF_6, and CHF_3 is used as a reaction gas at the dry etching process or at the cleaning process for a thin film forming device. In these processes, a discharge gas is produced which contains the PFC gas.--

On page 3, in the paragraph beginning on line :

-- For example, when a mixture gas having a plurality of gas constituents includes CF_4, NF_3, C_2F_6, and CHF_3, and nitrogen is an additional gas constituent, the gases can be separated by distillation separation into a first gas group which includes CF_4 (having a boiling point of –128 °C) and NF_3 (having a boiling point of –128.8 °C), a second gas group which includes C_2F_6 (having a boiling point of –78 °C) and CHF_3 (having a boiling point of –82.2 °C), and a third gas group which includes nitrogen (having a boiling point of –195 °C). Then, by chromatographic separation, the mixture gas of the first gas group can be separated into CF_4 and NF_3. The mixture gas of the second gas group can similarly be separated by chromatographic separation into C_2F_6 and CHF_3. ~~the~~The separated gases of CF_4, NF_3, C_2F_6, and CHF_3 can respectively be recovered for reuse. --

On page 4, in the paragraph beginning on line 8:

-- In the present invention, the plurality of specific gases are, for example, PFC gases discharged from a semiconductor manufacturing process. The PFC gases include any one of a fluorine ~~compounds~~compound having at least one of the elements C, N, and S as the constituting element. Specifically, examples of PFC gases include CF_4, NF_3, C_2F_6, C_3F_8, SF_6, and CHF_3. The present invention is particularly effective when the PFC gases include at least the following three constituents: CF_4, NF_3, and C_2F_6 or CHF_3 or when the PFC gases include at least the following three constituents: C_2F_6, CHF_3, and

CF_4 or NF_3. The present invention is especially effective for separation of PFC gases containing both CF_4 and NF_3 which have similar boiling points or for separation of PFC gases containing both C_2F_6 and CHF_3 which have somewhat similar boiling points. The gas to be treated usually contains 0.1 % to several percent PFC gas and nitrogen as the remainder gas.--

On page 5, in the paragraph beginning on line 23 of page 4:

-- The gas to be treated is first introduced to a distillation separator 10 for separating the gases by distillation separation into a plurality of gas constituent groups each of which group has similar boiling points. As the distillation separator 10, any known device which uses a distillation column can be used. That is, in the distillation column, gas constituents included in the gas to be ~~treaded~~treated are cooled to respective boiling points and liquefied to form a gas-liquid state so that separation and purification can be performed. For example, a mixture gas of two constituents having similar boiling points can be grouped as one group, and PFC gases can be separated and purified into a plurality of groups. More specifically, the gas to be treated is distillation separated into three gas groups, that is, CF_4 and NF_3 each of which has a boiling point near –128 °C constituting a first group, C_2F_6 and CHF_3 which have boiling points of –78 °C and -82.2 °C, respectively, constituting a second group, and nitrogen having a boiling point of –195 °C constituting a third group. The separated first gas group and second gas group are then each chromatographically separated into high purity specific gases by ~~a~~ chromatographic separators 12a and 12b provided downstream of the distillation separator. Nitrogen in the third gas group is recovered and reused. In the distillation separator 10, it is possible to further obtain fourth, fifth, etc. gas groups depending on the composition of gas constituents in the mixture gas to be treated.--

On page 5, in the paragraph beginning on line 23:

-- The first and second gas groups separated at the distillation separator 10 are then respectively introduced to ~~a~~ chromatographic separators 12a and 12b for separating the specific gases constituting each gas group and having similar boiling points, by chromatographic separation. That is, in the first group, a first specific gas (e.g. CF_4) and

a second specific gas (e.g. NF_3) are separated and in the second gas group, a third specific gas (e.g. C_2F_6) and fourth specific gas (e.g. CHF_3) are separated. Because the chromatographic separation operation is similar for both gas groups, the chromatographic separation operation will be described below for separation of CF_4 and NF_3 in the first gas group.--

On page 6, in the paragraph beginning on line 9:

-- As the chromatographic separators 12a and 12b, any known chromatographic separator having a column filled with a given filler can be used. The first gas group is passed through the separator 12a. In this manner, this first gas group is separated into its constituents because the constituents have different retention times due to a difference in the affinity of the gas constituents with respect to the filler. As a filler, for example, silica gel or molecular sieve can be used for separating CF_4 and NF_3. In the chromatographic separators 12a and 12b, nitrogen is used as a carrier gas and CF_4 and NF_3 are separated by sequentially desorbing and discharging CF_4 these gas constituents adsorbing onto the filler.--

On page 7, in the paragraph beginning on line 2:

-- It is also preferable to provide a plurality of columns in the chromatographic separator 12a (or 12b) to form a simulated-moving fed type chromatographic separator in which the first gas group is supplied to each column in sequence and each fraction is collected from each column in sequence. Fig. 2 shows a configuration example of a simulated-moving ~~fed~~feed type chromatographic separator 1 in which four columns 1a, 1b, 1c, and 1d are provided, and fractions are obtained by supplying the first gas group to the columns in sequence. For example, nitrogen can be continuously supplied to the columns 1a, 1b, 1c, and 1d as a carrier gas, and the first gas group can be introduced to the columns in sequence by switching, in sequence, the feed gas inlet valve in the downstream direction. Because gas of nitrogen, gas of CF_4 and nitrogen, gas of CF_4, NF_3 and nitrogen, and gas of NF_3 and nitrogen flow out from each of the columns 1a, 1b, 1c, and 1d, in that order, the gases can be separated and discharged by switching a valve at the exit side in sequence and driving corresponding one of vacuum pumps 2a, 2b, 2c, and

2d. The mixture fraction containing both CF_4 and NF_3 is circulated to and joined with the feed first gas group. In this manner, gas of nitrogen, gas of CF_4 and nitrogen, and gas of NF_3 and nitrogen are obtained at the exit of the chromatographic separator.

On page 8, in the paragraph beginning on line 24 of page 7:

-- It is preferable to perform collection of the gas for each constituent at the exit of the chromatographic separator and the switching of the valves in a simulated-moving ~~fed~~feed type chromatographic separator 1 in Fig. 2 based on control conditions which are set based on the gas composition of the first gas group or the performance of the filler, or an analysis result of the gas at the exit. When the gas collection and valve switching are performed based on the analysis result of the gas at the exit, gas constituents can be detected using, for example, a differential thermal detector (TCD) or Fourier transform-infrared analyzer (FT-IR), and the control can be performed based on the analysis. With this process, the gas is separated into its constituents, and thus, in the fractions for CF_4 and nitrogen, and for NF_3 and nitrogen, a pure mixture can be obtained with almost no other materials present.

On page 12, in the paragraph beginning on line 19:

-- According to the embodiment, by performing the upstream distillation separation, the gas to be treated which contains a plurality of specific gases and nitrogen as another gas can be separated into at least three gas groups with different boiling points, including at least one group containing two gas constituents of which the boiling points are similar. Using the chromatographic separation for separating specific gas<u>es</u>, the plurality of mixture gases can then be reliably separated into each constituent, the constituents being difficult to be separated by other methods, such as, for example, CF_4 and NF_3, and C_2F_6 and CHF_3. In other words, according to the present invention, a plurality of constituents, in particular, three or more PFC gas constituents, that cannot be separated by a single separation method such as distillation separation or chromatographic separation, can be separated inexpensively and in high purity. The separated CF_4, NF_3, C_2F_6, and CHF_3 can be recovered and reused.--